

### **Amendments to the Claims:**

This listing of claims will replace all prior versions and listings of claims in the application.

### **Listing of Claims:**

1. (CANCELLED)
2. (CANCELLED)
3. (ORIGINAL) A method for quantitating protein-protein interactions which method comprises the steps of:
  - (a) expressing one or more prey protein in cells, wherein a prey protein is labelled with an epitope tag permitting separation of the prey protein from other proteins in the cells;
  - (b) expressing one or more bait protein in the cells wherein a bait protein is labelled with a detectable substance permitting identification of the bait protein and protein-protein interactions comprising a prey protein and the bait protein;
  - (c) obtaining a lysate of the cells and assaying an aliquot of the lysate to measure total expression of the epitope tag and detectable substance;
  - (d) assaying a second aliquot of the lysate to measure the amount of a detectable substance that coprecipitates with an epitope tagged prey protein; and
  - (e) comparing the amounts measured in steps (c) and (d) to quantitate the protein-protein interaction.
4. (ORIGINAL) A method as claimed in claim 3 wherein the cells are subjected to an extracellular or intracellular signal after step (b).
5. (ORIGINAL) A method for determining an interactome for one or more bait protein comprising:
  - (a) preparing recombinant cells each expressing one or more bait protein and one or more prey protein selected from a variegated population of prey proteins;

- (b) inducing formation of protein-protein interactions between a prey protein and bait protein in the cells;
  - (c) identifying protein-protein interactions comprising a prey protein and bait protein to thereby determine the interactome for the bait protein.
6. (CANCELLED)
7. (CANCELLED)
8. (CANCELLED)
9. (CANCELLED)
10. (CANCELLED)
11. (CANCELLED)
12. (CURRENTLY AMENDED) A method for assaying for changes in protein-protein interactions in response to intracellular or extracellular factors or a test agent comprising:
- (a) introducing one or more prey protein in cells, wherein a prey protein is labelled with an epitope tag permitting separation of the prey protein from other proteins in the cells;
  - (b) introducing one or more bait protein in the cells, wherein a bait protein is labelled with a detectable substance permitting identification of the bait protein and protein-protein interactions comprising a prey protein and the bait protein;
  - (c) inducing formation of protein-protein interactions between a prey protein and bait protein;
  - (d) introducing an intracellular or extracellular factor or test agent;
  - (e) assaying protein-protein interactions comprising a prey protein and bait protein;
- and

- (f) comparing the assayed protein-protein interactions with protein-protein interactions assayed in the absence of the intracellular or extracellular factor.
13. (CANCELLED)
14. (CURRENTLY AMENDED) A method of claim ~~[[13]]~~ 12 wherein an increase in the protein-protein interactions with a test agent indicates that the agent is an agonist of the interaction and a decrease in the amount of protein-protein interactions indicates that the agent is an antagonist.
15. (CURRENTLY AMENDED) A method of ~~any preceding~~ claim 5 wherein the cells are mammalian cells.
16. (CURRENTLY AMENDED) A method as claimed in ~~any preceding~~ claim 5 wherein one bait protein is introduced or expressed in the cells.
17. (CURRENTLY AMENDED) A method as claimed in ~~any preceding~~ claim 5 wherein two or more bait proteins are introduced or expressed in the cells.
18. (ORIGINAL) A method as claimed in claim 17 wherein each bait protein is labeled with a different detectable substance.
19. (ORIGINAL) A method as claimed in ~~any preceding~~ claim 5 wherein the detectable substance is an enzyme, radioisotope, fluorescent label, luminescent label, or an enzymatic label.
20. (ORIGINAL) A method of claim 19 wherein the detectable substance is an enzymatic label.
21. (CURRENTLY AMENDED) A method of claim 20 wherein the detectable substance is luciferase, in particular Renilla luciferase.

22. (CURRENTLY AMENDED) A method as claimed in ~~any preceding~~ claim 17 wherein two or more prey proteins are introduced into the cells.
23. (CURRENTLY AMENDED) A method of ~~any preceding~~ claim 17 wherein the epitope tag is FLAG, hemagglutinin, His6, or an Ig sequence.
24. (CURRENTLY AMENDED) A method of ~~any preceding~~ claim 5 wherein the prey protein comprises a protein sequence obtained from genomic DNA sequences or random sequences.
25. (CURRENTLY AMENDED) A method of ~~any preceding~~ claim 5 wherein the prey protein comprises a library of protein sequences.
26. (CURRENTLY AMENDED) A method of ~~any preceding~~ claim 5 wherein the bait protein is a functional domain of a protein involved in signal transduction.
27. (CURRENTLY AMENDED) A method of ~~any preceding~~ claim 5 wherein the bait protein is a protein of the TGF $\beta$  proteome, Wnt/Wingless pathway, Sak/Polo pathway, or a receptor tyrosine kinase pathway.
28. (CURRENTLY AMENDED) A method of ~~any preceding~~ claim 5 wherein the bait protein is a Smad protein, SARA family protein, Smad-interacting protein, TGF $\beta$  receptor, TGF $\beta$  receptor interacting protein, SMURF, BMP receptor, APC,  $\beta$ -catenin, axin, dishevelled, GSK-3 $\beta$ , TCFs1-4, Sak, Plks, EGF, FGF, PDGF, or NGF.
29. (CANCELLED)
30. (CANCELLED)
31. (CANCELLED)